

## CLAIMS

What is claimed is:

Claim 1 - A training radar display for decoding and displaying radar signals in different formats comprising:

- means for providing reference frequencies being variable in accordance with rate of travel fluctuations;
- means connected to the variable reference frequency means for generating a signal that is phase locked to the variable reference frequency;
- means for generating directing signals;
- means coupled to the phase locked signal outputting means and the directing signal's generating means for synthesizing a fine tuned signal based on the output signal of the phase locked signal generating means in accordance with the signals received from the directing signal's generating means;
- means coupled to the synthesizing means for using the output thereof to generate special purpose timing signals as directed by the directing signal's generating means;
- means providing video signals;
- means disposed to receive a video input signal from the video signal providing means for producing a sense directed gain controlled video signal;
- a plan position indicator converter coupled to receive the video output of the producing means and to process the video output from polar to rectilinear coordinates in accordance with signals received from the directing signal's generating means;
- means coupled to the plan position indicator converter and to receive the special purpose timing signal from the using means for presenting a display thereof; and
- a control panel connected to the directing signal's generating means, the video input producing means, the plan position indicator converter and presenting means to provide for input direction from the directing signal generating means.

*Sub. A*  
1 Claim 2 - An apparatus according to claim 1 in which the variable reference  
2 frequency means is a recording on a tape that has a reference tone recorded thereon  
3 and the variable reference frequency thereof is caused by fluctuations of the tape  
4 playback rate.

1 Claim 3 <sup>20</sup> An apparatus according to claim <sup>1</sup> 2 in which the video signal providing  
2 means is a recording on the same tape as the variable reference frequency means  
3 alongside and in the same time frame thereof.

1 Claim 4 <sup>30</sup> An apparatus according to claim <sup>2</sup> 3 in which the phase locked signal  
2 <sup>3</sup> outputting means is a phase locked oscillator and the directing signal's generating  
3 means is a control computer.

1 Claim 5 <sup>40</sup> An apparatus according to claim <sup>3</sup> 4 in which the synthesizing means is a  
2 frequency synthesizer, the using means is a timing generator and the presenting means  
3 is a video display unit.

1 Claim 6 <sup>50</sup> An apparatus according to claim <sup>4</sup> 5 in which the phase locked oscillator  
2 is fabricated to generate a <sup>10</sup> 10 MHz signal and the frequency synthesizer is composed of  
3 elements to generate a <sup>50</sup> 50 KHz signal in response thereto and the control computer.

*a* 1 Claim 7 <sup>60</sup> An apparatus according to claim <sup>5</sup> 6 in which the phase-lock outputting  
2 means includes means for determining when phase-lock to the variable reference tone  
3 has occurred.

1 Claim 8 <sup>10</sup> An apparatus according to claim <sup>6</sup> 7 in which the phase-lock outputting  
2 means includes an internal crystal generating a stable reference frequency tone that is  
3 coupled to the phase-lock determining means to be actuated when no variable reference  
4 tone is being received.

1                    <sup>8</sup>  
                    Claim 9    An apparatus according to claim <sup>7</sup>8 in which the internal crystal passes a  
2                    10 MHz stable signal for the interconnected circuitry of the display control unit to  
3                    permit operation thereof in other modes than when a variable reference tone is  
4                    provided.

;  
2                    <sup>9</sup>  
                    Claim 10    An apparatus according to claim <sup>8</sup>9 in which the plan position indicator  
3                    converter provides analog sweep information and Z axis video information to create the  
                    picture on an interconnected display unit.

END